

2026 Maths Games Junior - Years 5 & 6 Resource Kit 1 Teaching Problem Solving



**MATHS
GAMES**

Problem Solving Strategies

This resource kit follows on from the Preparation Kit and its emphasis on:

Guess, Check and Refine

Draw a Diagram

The problems are sourced from previous Junior (Division J) Maths Olympiads and Maths Games papers.

They introduce two new problem solving strategies:

1. Find a Pattern

One of the most frequently used problem solving strategies is that of recognising and extending a pattern.

Students can often simplify a difficult problem by identifying a pattern in it, and then applying that pattern to the problem situation.

2. Build a Table

A table displays information so that it is easily located and understood, and missing information becomes obvious.

If students are not given the data for a problem, and must generate it themselves, a table is an excellent way to record what they have done so they don't have to repeat their efforts.

A table can also be invaluable for detecting significant patterns.

Resource Kit 1 focuses on:

Find a Pattern

Build a Table

Set Yellow

Problems with fully worked solutions.

Set Green

Problems similar to Set Yellow, but with fewer difficult elements.

Preparation Tasks

Tasks designed to encourage discussion and collaboration in problem solving.

Set Orange

More challenging problems to extend students.

Further questions and solution methods can be found in the APSMO resource book "Building Confidence in Maths Problem Solving", available from www.apsmo.edu.au.

How to use these problems

At the start of the lesson, present the problem and ask the students to think about it. Encourage students to try to solve it in any way they like. When the students have had enough time to consider their solutions, ask them to describe or present their methods, taking particular note of different ways of arriving at the same solution.

Each question includes at least one solution method that the majority of students should be able to follow. By participating in lessons that demonstrate achievable problem solving techniques, students may gain increased confidence in their own ability to address unfamiliar problems.

Finally, the consideration of different solution methods is fundamental to the students' development as effective and sophisticated problem solvers. Even when students have solved a problem to their own satisfaction, it is important to expose them to other methods and encourage them to judge whether or not the other methods are more efficient.



Preparation Kit

Guess, Check and Refine

This involves making a reasonable guess of the answer, and checking it against the conditions of the problem. An incorrect guess may provide more information that may lead to the answer.

Draw a Diagram

A diagram may reveal information that may not be obvious just by reading the problem.

It is also useful for keeping track of where the student is up to in a multi-step problem.

Resource Kit 1

Find a Pattern

A frequently used problem solving strategy is that of recognising and extending a pattern.

Students can often simplify a difficult problem by identifying a pattern in the problem situation.

Build a Table

A table displays information so that it is easily located and understood.

A table is an excellent way to record data so the student doesn't have to repeat their efforts.

Resource Kit 2

Work Backwards

If a problem describes a procedure and then specifies the final result, this method usually makes the problem much easier to solve.

Make an Organised List

Listing every possibility in an organised way is an important tool.

How students organise the data often reveals additional information.

Resource Kit 3

Solve a Simpler Related Problem

Many hard problems are actually simpler problems that have been extended to larger numbers.

Patterns can sometimes be identified by trying the problem with smaller numbers.

Eliminate All But One Possibility

Deciding what a quantity is not, can narrow the field to a very small number of possibilities.

These can then be tested against the conditions of the original problem.

Resource Kit 4

Convert to a More Convenient Form

There are times when changing some of the conditions of a problem makes a solution clearer or more convenient.

Divide a Complex Shape

Sometimes it is possible to divide an unusual shape into two or more common shapes that are easier to work with.



Set Yellow

- 1.1) When Karl climbed to the top of Mount Everest and then back down again, he spent fifty nights camping on the mountain.

If he started from the base on a Thursday, what day of the week was it when he got back down to the base of the mountain?

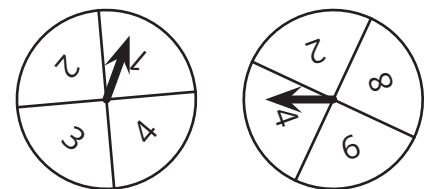
- 1.2) In a board game, a number is made by adding the number spun on Spinner A to the number spun on Spinner B.

Spinner A has the numbers 1, 2, 3 and 4 on it.

Spinner B has the numbers 2, 4, 6 and 8 on it.

In how many ways can you make a total that is odd?

(We will consider $1+6$ and $3+4$ to be two different ways.)



Spinner A

Spinner B

- 1.3) A short jelly snake is 10 cm long.

A long jelly snake is 20 cm long.

Marc has six jelly snakes.

He lays them end-to-end across the kitchen bench.

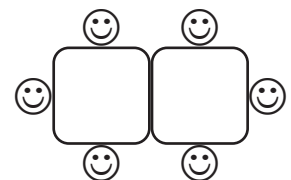
In total, his line of jelly snakes is 1 metre long.

How many short jelly snakes does Marc have?

- 1.4) Four people can be seated at a single table.

If two tables are placed end to end, six people can be seated as shown in the diagram.

How many tables must be placed end to end to seat 22 people?





Maths Games Example Solution 1.1 - Yellow

When Karl climbed to the top of Mount Everest and then back down again, he spent fifty nights camping on the mountain.

If he started from the base on a Thursday, what day of the week was it when he got back down to the base of the mountain?

Strategy 1: Build a Table, and Find a Pattern

We can draw a calendar.

Karl starts out on a Thursday, so his first sleep is on a Thursday night.

Let's mark Day 1 on the right hand side of the box, to indicate that it's the night between Thursday and Friday.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1		

We can keep numbering nights all the way up to 50, but perhaps it would be easier if we find a pattern.

Since there are seven days in a week, we can use the 7 times table to get close to 50.

The 49th night was Wednesday night.

The 50th night was Thursday night.

After camping on the 50th night, Karl returned to base on a Friday.

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
			21			
			28			
			35			
			42			
			49	50		

Strategy 2: Solve a Simpler Related Problem

Fifty nights isn't a very convenient number of nights to think about.

What would be a convenient number?

How about 7 nights?

Karl starts out on a Thursday.

After 7 nights, it's Thursday again.

After another 7 nights (14 nights in total), it's Thursday again.

⋮

We can keep going like this until we get to 49 nights.

⋮

After 49 nights, it's Thursday again.

After 50 nights, the day of the week is Friday.

Number of Nights	Day of Week
7	Thursday
14	Thursday
21	Thursday
28	Thursday
35	Thursday
42	Thursday
49	Thursday
50	Friday

Answer

Friday



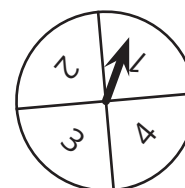
Maths Games Example Solution 1.2 - Yellow

In a board game, a number is made by adding the number spun on Spinner A to the number spun on Spinner B.

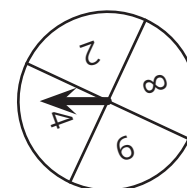
Spinner A has the numbers 1, 2, 3 and 4 on it.

Spinner B has the numbers 2, 4, 6 and 8 on it.

In how many ways can you make a total that is odd?



Spinner A



Spinner B

Strategy 1: Build a Table

Let's begin by listing the four possible results for Spinner A.

Spinner A	1	
2		
3		
4		

For each of these results, we could have one of four different results on Spinner B.

		Spinner B			
		2	4	6	8
Spinner A	1				
	2				
	3				
	4				

Let's calculate the possible sums, to fill in the table.

		Spinner B			
		2	4	6	8
Spinner A	1	3	5	7	9
	2	4	6	8	10
	3	5	7	9	11
	4	6	8	10	12

We can now mark all of the totals that are odd.

		Spinner B			
		2	4	6	8
Spinner A	1	3	5	7	9
	2	4	6	8	10
	3	5	7	9	11
	4	6	8	10	12

There are **8** ways that result in an odd total.

Strategy 2: Draw a Diagram, and Find a Pattern

An even number is divisible by 2.
This means that it can be represented by a rectangular array that is 2 units wide.

2	4	6	8

An odd number cannot be represented by an array that is 2 units wide.
The extra 1 is unpaired.

1	3	5	7

From the diagrams, we can see that:

Even + Even = Even	Even + Odd = Odd	Odd + Odd = Even

All 4 of the numbers on Spinner B are even.

So, since the addition of an even number does not change the parity of a number, the parity of the sum of the two spinners is just going to be the parity of the number from Spinner A.

There are 2 odd numbers on Spinner A.

So there are $2 \times 4 = 8$ ways that result in an odd total.



Maths Games Example Solution 1.3 - Yellow

A short jelly snake is 10cm long. A long jelly snake is 20cm long.

Marc has six jelly snakes. He lays them end-to-end across the kitchen bench.

In total, his line of jelly snakes is 1 metre long.

How many short jelly snakes does Marc have?

Strategy 1: Build a Table, and Find a Pattern

Let's start by guessing that Marc has **6** short jelly snakes.
With **6** snakes in total, he would have $6 - 6 = 0$ long snakes.
His snakes would have a total length of
 $6 \times 10\text{cm} + 0 \times 20\text{cm} = 60\text{cm}$.

No. short jelly snakes	6				
No. long jelly snakes	0				
Total length (cm)	60				

If Marc had **5** short jelly snakes, and $6 - 5 = 1$ long jelly snake, his snakes would have a total length of
 $5 \times 10\text{cm} + 1 \times 20\text{cm} = 70\text{cm}$.
With **4** short, and $6 - 4 = 2$ long snakes, the total length is
 $4 \times 10\text{cm} + 2 \times 20\text{cm} = 80\text{cm}$.

No. short jelly snakes	6	5	4		
No. long jelly snakes	0	1	2		
Total length (cm)	60	70	80		

Can you see a pattern?
Every time we exchange a short snake for a long snake, the total length increases by **10cm**.
We know that the total length of Marc's jelly snakes is **1 metre, or 100cm**.

No. short jelly snakes	6	5	4		
No. long jelly snakes	0	1	2		
Total length (cm)	60	70	80	90	100

+10 +10 +10 +10

If we now follow the pattern for the number of short jelly snakes, we end up with **2** short jelly snakes.

Let's check:

2 short jelly snakes, and $6 - 2 = 4$ long jelly snakes, would have a total length of $2 \times 10\text{cm} + 4 \times 20\text{cm} = 100\text{cm}$.

No. short jelly snakes	6	5	4	3	2
No. long jelly snakes	0	1	2		
Total length (cm)	60	70	80	90	100

-1 -1 -1 -1
+10 +10 +10 +10

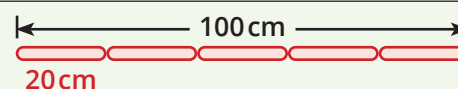
That matches the question, so **Marc has 2 short jelly snakes**.

Strategy 2: Draw a Diagram

Let's draw enough long jelly snakes to make up **1 metre (100cm)**.

There would be $100\text{cm} \div 20\text{cm} = 5$ long jelly snakes.

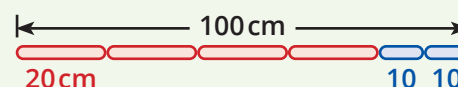
That's not enough jelly snakes. Marc has **6** in total.



Let's change one of the long jelly snakes into two short ones.

The total length remains the same, since two short jelly snakes is $2 \times 10\text{cm} = 20\text{cm}$ long.

There would then be **4** long jelly snakes and **2** short jelly snakes, for a total of $4 + 2 = 6$ jelly snakes.



That matches the question.

Marc has 2 short jelly snakes.

Answer

2

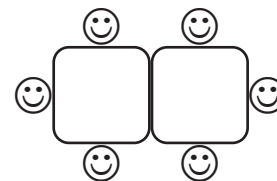


Maths Games Example Solution 1.4 - Yellow

Four people can be seated at a single table.

If two tables are placed end to end, six people can be seated as shown in the diagram.

How many tables must be placed end to end to seat 22 people?



Strategy 1: Draw a Diagram, and Find a Pattern

6 people can sit at 2 tables.	With 3 tables, we can seat 8 people. What changed when we went from 2 tables to 3 tables?	With 4 tables, we can seat 10 people. What changed when we went from 3 tables to 4 tables?
Does it help to think of each new table being placed in the middle instead of at the end? Is there a pattern with the number of people we can seat at the tables in the middle?	Each end table seats 3 people. The two end tables together seat 6 people.	There are $22 - 6 = 16$ people left. So, all together, the middle tables need to seat 16 people. Since each middle table seats 2 people, there must be $16 \div 2 = 8$ middle tables. In total, there would be 2 end tables and 8 middle tables. $2 + 8 = 10$ tables will seat 22 people.

Strategy 2: Find a Pattern

If we remove the 2 end seats, it might be easier to see a pattern. With the end seats off:	2 tables seat 4 people,	3 tables seat 6 people,	4 tables seat 8 people.
We have $22 - 2 = 20$ people left to seat. How many tables will we need for these 20 people?			

After re-seating our two end seat people, that's 22 people in total.

With 22 people, we will need 10 tables.

Answer

10



Set Green

- 1.1) When Patrick climbed to the top of Mount Everest and then back down again, he spent seventy nights camping on the mountain.

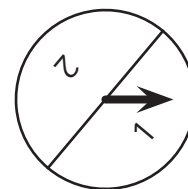
If he started from the base on a Thursday, what day of the week was it when he got back down to the base of the mountain?

- 1.2) In a board game, a number is made by adding the number spun on Spinner A to the number spun on Spinner B.

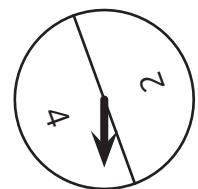
Spinner A has the numbers 1 and 2 on it.

Spinner B has the numbers 2 and 4 on it.

In how many ways can you spin a total that is odd?



Spinner A



Spinner B

- 1.3) A small chocolate bar is 5 cm long.

A large chocolate bar is 10 cm long.

Mary has five chocolate bars.

She lays them end-to-end across the kitchen bench.

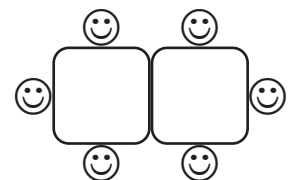
In total, her line of chocolate bars is 40 cm long.

How many small chocolate bars does Mary have?

- 1.4) Four people can be seated at a single table.

If two tables are placed end to end, six people can be seated as shown in the diagram.

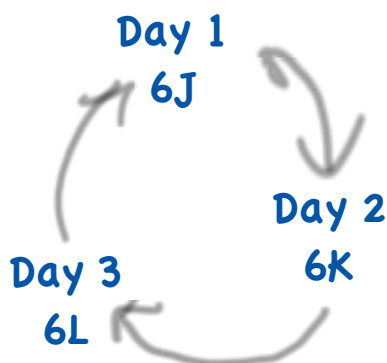
How many tables must be placed end to end to seat 10 people?





Preparation Task 1

- A) Charlie decided to draw a circular diagram to show the next class that would be raising the flag.



Three classes (6J, 6K and 6L) take it in turn to raise the flag at assembly every morning.

6J did it on the first day of term.

6K did it on the second day, followed by 6L on the third day.

It was 6J's turn again on the fourth day.

Which class raised the flag on the 40th day of term?

Benji said,

"That makes it look like Day 1 comes after Day 3."

To make it clearer, Charlie drew a second diagram that started with Day 4.

Using Charlie's idea, draw the second diagram, and the third diagram.

- B) Benji and Charlie noticed a pattern for the days that 6L raised the flag.
Describe the pattern that they are seeing.

- C) Using Charlie's pattern, can you draw the circle that has Day 40 on it?
Which class raises the flag on Day 40?



Maths Games Example Solution - Preparation Task 1

Three classes (6J, 6K and 6L) take it in turn to raise the flag at assembly every morning.

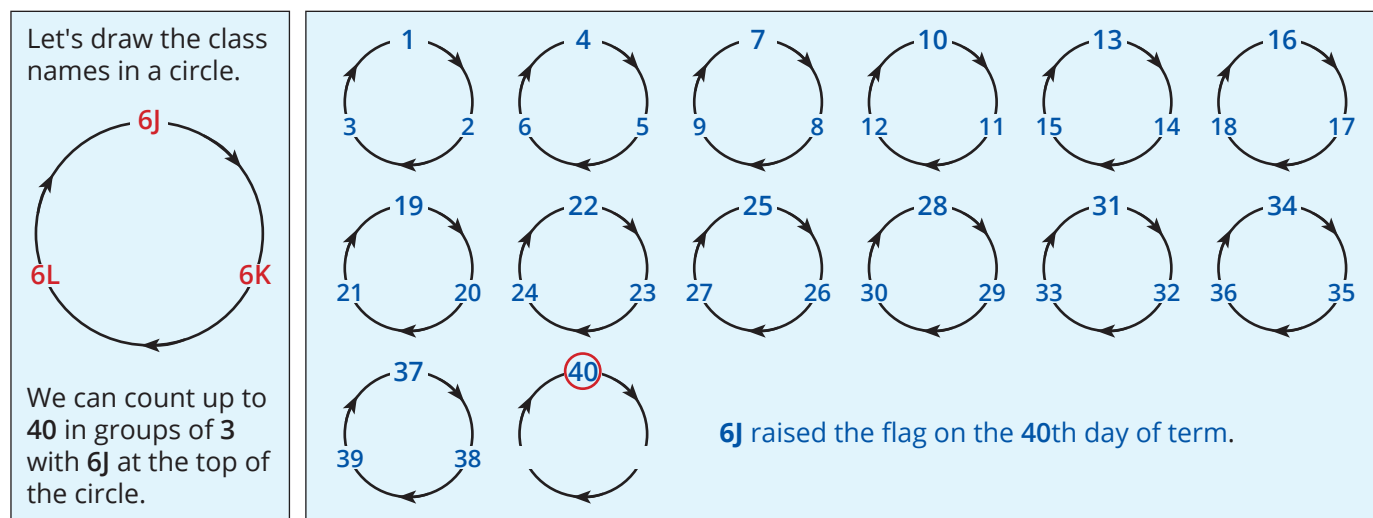
6J did it on the first day of term.

6K did it on the second day, followed by 6L on the third day.

It was 6J's turn again on the fourth day.

Which class raised the flag on the 40th day of term?

Strategy 1: Draw a Diagram



Strategy 2: Build a Table, and Find a Pattern

Let's draw a table, and see if we can find a pattern we can use.

Class	6J	6K	6L
Day of Term	1	2	3
	4	5	6
	7	8	9

The pattern repeats every 3 days.
We can see that 6L raises the flag on days that are a multiple of 3.

After identifying the pattern for 6L's days, we can continue the pattern to find the number 40.

Class	6J	6K	6L
Day of Term			...
			12
			15
			18
			21
			24
			27
			30
			33
			36
	37	38	39
Found it.	40		

6J raised the flag on the 40th day of term.

Answer

6J



Preparation Task 2

- A) Sally said,
"I think there is a pattern.
It looks like the pattern happens every time I
finish a subtraction."
Can you explain what Sally is seeing?

Find the value of

$$87 - 76 + 65 - 54 + 43 - 32 + 21 - 10.$$

- B) Find the value of the expression $87 - 76 + 65 - 54 + 43 - 32 + 21 - 10$.

- C) Sally said,
"If we change every second number, we can write a new expression that has a value of $4 \times 9 = 36$."

$$87 - \square + 65 - \square + 43 - \square + 21 - \square = 36$$

Complete Sally's new expression by filling in the boxes above.



Maths Games Example Solution - Preparation Task 2

Find the value of $87 - 76 + 65 - 54 + 43 - 32 + 21 - 10$.

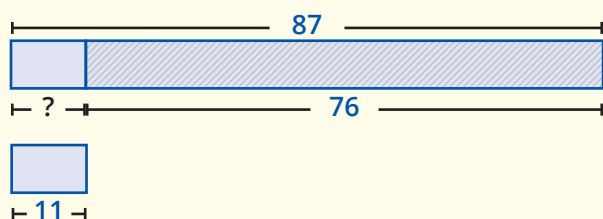
Strategy: Draw a Diagram, and Find a Pattern

There are different diagrammatic representations that can be used for this solution.

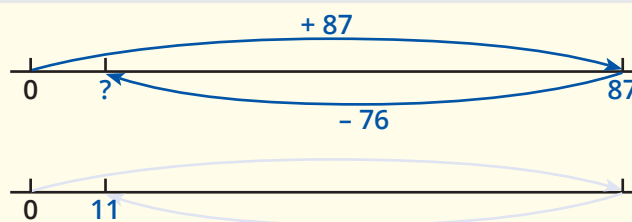
Here, we will use a bar diagram, and also a number line.

We begin with $87 - 76 = 11$.

Bar Diagram

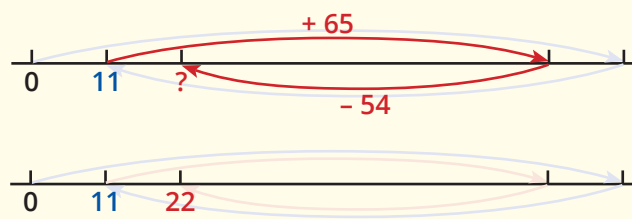
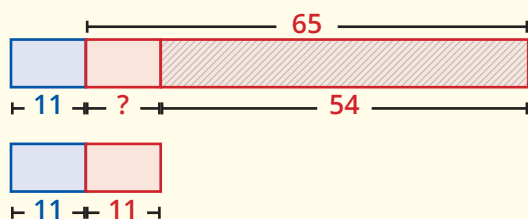


Number Line



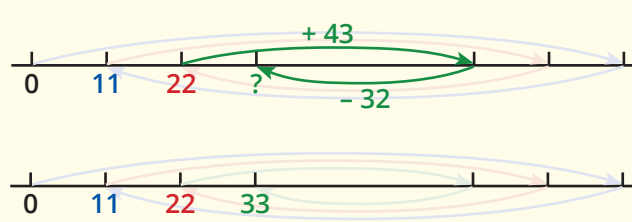
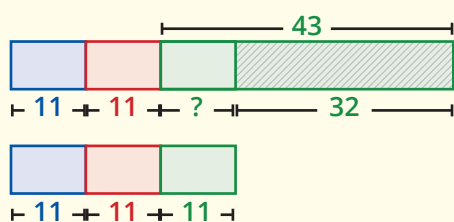
Next, we add 65, and then subtract 54.

$$65 - 54 = 11.$$

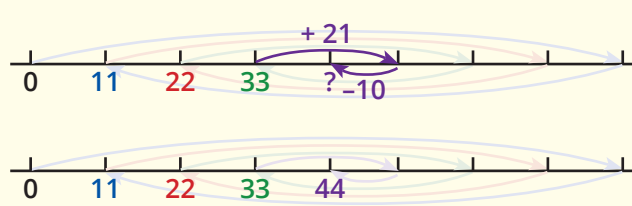
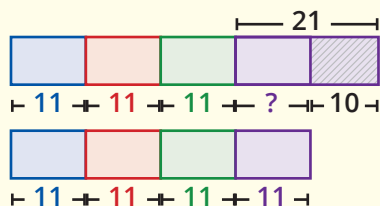


The pattern of adding 11 continues twice more in the expression:

$$43 - 32 = 11,$$



and $21 - 10 = 11$.



$$87 - 76 + 65 - 54 + 43 - 32 + 21 - 10 = 11 + 11 + 11 + 11 = 44.$$

Answer

44



Preparation Task 3

- A) Cameron said,
"If I was given these options, I would definitely have the pea soup. I wouldn't mind which main course, though."
List the possible options for Cameron's starter and main course.

At a cafeteria, you have a choice of:

- either onion soup or pea soup as a starter, then
- either meat, fish or vegetarian for the main course, and
- either ice cream or cake for dessert.

How many choices do you have for your complete meal, including a starter, a main course and a dessert?

- B) Annie said,
"I don't mind which soup I have, but I don't eat fish."
List the possible options for Annie's starter and main course.

- C) Suzie said,
"I think everything sounds fine. I wouldn't mind what I have."
She drew a table listing all of her options for starter and main course.
Can you complete Suzie's table?

		Main Course choices		
		Meat	Fish	
Starter choices	Onion Soup	Onion Soup, Meat		

- D) How many choices does Suzie have for the complete meal?



Maths Games Example Solution - Preparation Task 3

At a cafeteria, you have a choice of:

- either onion soup or pea soup as a starter, then
- either meat, fish or vegetarian for the main course, and
- either ice cream or cake for dessert.

How many choices do you have for your complete meal, including a starter, a main course and a dessert?

Strategy 1: Build a Table

Let's use a table to list all of the combinations for the starter and the main course.

There are 2 possible starters, and 3 possible main courses.

		Main Course choices		
		Meat	Fish	Veg
Starter choices	Onion Soup	Onion, Meat	Onion, Fish	Onion, Veg
	Pea Soup	Pea, Meat	Pea, Fish	Pea, Veg

There are $2 \times 3 = 6$ combinations for the starter and the main course.

To add the dessert, we can construct a new table that combines the 6 choices of starter and main course with the 2 choices for dessert.

		Dessert Choices	
		Ice cream	Cake
Starter and Main Course choices	Onion, Meat	Onion, Meat, Ice cream	Onion, Meat, Cake
	Onion, Fish	Onion, Fish, Ice cream	Onion, Fish, Cake
	Onion, Veg	Onion, Veg, Ice cream	Onion, Veg, Cake
	Pea, Meat	Pea, Meat, Ice cream	Pea, Meat, Cake
	Pea, Fish	Pea, Fish, Ice cream	Pea, Fish, Cake
	Pea, Veg	Pea, Veg, Ice cream	Pea, Veg, Cake

There are $6 \times 2 = 12$ different choices for the meal.

Strategy 2: Make an Organised List

You can begin by choosing either **onion** or **pea soup**.

Starter
Onion Soup
Pea Soup

For each of these options, you can follow it up with **meat**, **fish** or **vegetarian**.

Starter	Main Course
Onion Soup	Meat
Onion Soup	Fish
Onion Soup	Vegetarian
Pea Soup	Meat
Pea Soup	Fish
Pea Soup	Vegetarian

After choosing one of these combinations, you have one more choice: either **ice cream** or **cake** for dessert.

Starter	Main Course	Dessert
Onion Soup	Meat	Ice Cream
Onion Soup	Meat	Cake
Onion Soup	Fish	Ice Cream
Onion Soup	Fish	Cake
Onion Soup	Vegetarian	Ice Cream
Onion Soup	Vegetarian	Cake
Pea Soup	Meat	Ice Cream
Pea Soup	Meat	Cake
Pea Soup	Fish	Ice Cream
Pea Soup	Fish	Cake
Pea Soup	Vegetarian	Ice Cream
Pea Soup	Vegetarian	Cake

We can be sure we listed all of the choices because we did it in an organised way.

There are **12** different choices for the complete meal.

Answer

12



Preparation Task 4

A) If half of the fish in the tank are small, and the other half are large, what is the total cost of all the fish?

In a fish tank at a pet shop, there are large fish which cost \$6 each, and small fish which cost \$1 each.

There are 50 fish in the tank and they cost a total of \$100.

How many small fish are in the tank?

B) Are most of the fish in the tank large or small?
Justify your answer.

C) James decided to organise his working in a table.
He knew that there were **50** fish in total.
He swapped large fish for small fish, and vice versa, until the total reached **\$100**.
Complete James's table.
How many small fish are in the tank?

Small fish	Large fish	Total cost (\$)
25	25	
30		



Maths Games Example Solution - Preparation Task 4

In a fish tank at a pet shop, there are large fish which cost \$6 each, and small fish which cost \$1 each.

There are 50 fish in the tank and they cost a total of \$100.

How many small fish are in the tank?

Strategy: Build a Table and Find a Pattern

Let's begin with \$100 worth of small fish.

At \$1 each, there are $\$100 \div \$1 = 100$ small fish.

No. small fish	100	
No. large fish	0	
Total fish	100	

A large fish costs \$6.

So 6 small fish can be exchanged for 1 large fish.

This leaves $100 - 6 = 94$ small fish.

In total, there are now $94 + 1 = 95$ fish.

No. small fish	100	94	
No. large fish	0	1	
Total fish	100	95	

If another 6 small fish are exchanged for 1 large fish, there will be $94 - 6 = 88$ small fish, and $1 + 1 = 2$ large fish.

In total, there are now $88 + 2 = 90$ fish.

No. small fish	100	94	88	
No. large fish	0	1	2	
Total fish	100	95	90	

Can you see a pattern?

Every time we exchange six small fish for one large fish, the total number of fish decreases by 5.

No. small fish	100	94	88	
No. large fish	0	1	2	
Total fish	100	95	90	

$\xrightarrow{-5}$ $\xrightarrow{-5}$

There are supposed to be 50 fish in total.

Let's follow the pattern until we reach 50.

No. small fish	100	94	88								
No. large fish	0	1	2								
Total fish	100	95	90	85	80	75	70	65	60	55	50

$\xrightarrow{-5}$ $\xrightarrow{-5}$

We will also need to follow the pattern for the number of large fish.

No. small fish	100	94	88								
No. large fish	0	1	2	3	4	5	6	7	8	9	10
Total fish	100	95	90	85	80	75	70	65	60	55	50

$\xrightarrow{-5}$ $\xrightarrow{-5}$

The table shows that, when there are 50 fish in total, there are 10 large fish.

If there are 10 large fish, and 50 fish in total, there must be $50 - 10 = 40$ small fish.

Let's check: 40 small fish at \$1 each would cost $40 \times \$1 = \$40$.

10 large fish at \$6 each would cost $10 \times \$6 = \$60$.

In total, the 50 fish cost $\$40 + \$60 = \$100$.

That matches the question.

There are 40 small fish in the tank.



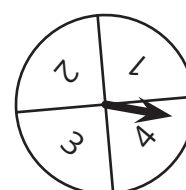
Set Orange

1.1) What is the greatest number of Mondays that can occur in 45 consecutive days?

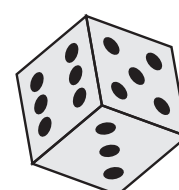
1.2) Laura spins Spinner A and rolls a standard die, and then adds the results together.

In how many ways can she get a total that is odd?

(We will consider spinning 1 on the spinner and rolling 4 on the die to be different from rolling 1 on the die and spinning 4 on the spinner.)

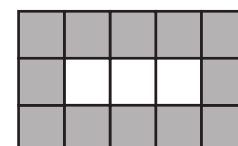
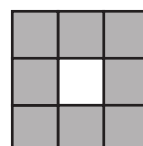


Spinner A



1.3) Each day Jeffrey earns \$3 for washing the dishes.
He can earn \$5 instead by also sweeping the kitchen.
After ten days, Jeffrey has earned a total of \$36.
On how many of these days did Jeffrey sweep the kitchen?

1.4) I am making a pattern with square tiles.
I surround one row of white tiles with grey tiles.
The diagram shows what it looks like when I have 1, 2, and 3 white tiles.
How many grey tiles will I need when I have a row of 20 white tiles?





Example Problem 1.1 - Summary

Example Problem 1.1 - Green

When Patrick climbed to the top of Mount Everest and then back down again, he spent seventy nights camping on the mountain.

If he started from the base on a Thursday, what day of the week was it when he got back down to the base of the mountain?

Example Problem 1.1 - Yellow

When Karl climbed to the top of Mount Everest and then back down again, he spent fifty nights camping on the mountain.

If he started from the base on a Thursday, what day of the week was it when he got back down to the base of the mountain?

Example Problem 1.1 - Orange

What is the greatest number of Mondays that can occur in 45 consecutive days?



Example Problem 1.2 - Summary

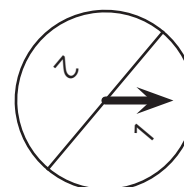
Example Problem 1.2 - Green

In a board game, a number is made by adding the number spun on Spinner A to the number spun on Spinner B.

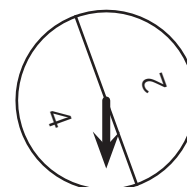
Spinner A has the numbers 1 and 2 on it.

Spinner B has the numbers 2 and 4 on it.

In how many ways can you make a total that is odd?



Spinner A



Spinner B

Example Problem 1.2 - Yellow

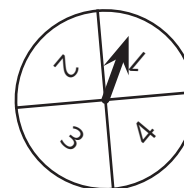
In a board game, a number is made by adding the number spun on Spinner A to the number spun on Spinner B.

Spinner A has the numbers 1, 2, 3 and 4 on it.

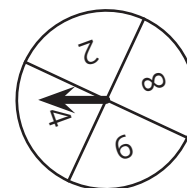
Spinner B has the numbers 2, 4, 6 and 8 on it.

In how many ways can you make a total that is odd?

(We will consider 1+6 and 3+4 to be two different ways.)



Spinner A



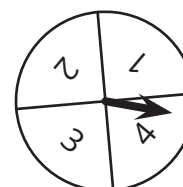
Spinner B

Example Problem 1.2 - Orange

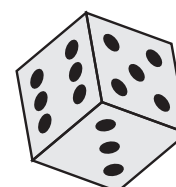
Laura spins Spinner A and rolls a standard die, and then adds the results together.

In how many ways can she make a total that is odd?

(We will consider spinning 1 on the spinner and rolling 4 on the die to be different from rolling 1 on the die and spinning 4 on the spinner.)



Spinner A





Example Problem 1.3 - Summary

Example Problem 1.3 - Green

A small chocolate bar is 5 cm long.
A large chocolate bar is 10 cm long.
Mary has five chocolate bars.
She lays them end-to-end across the kitchen bench.
In total, her line of chocolate bars is 40 cm long.
How many small chocolate bars does Mary have?

Example Problem 1.3 - Yellow

A short jelly snake is 10cm long.
A long jelly snake is 20cm long.
Marc has six jelly snakes.
He lays them end-to-end across the kitchen bench.
In total, his line of jelly snakes is 1 metre long.
How many short jelly snakes does Marc have?

Example Problem 1.3 - Orange

Each day Jeffrey earns \$3 for washing the dishes.
He can earn \$5 instead by also sweeping the kitchen.
After ten days, Jeffrey has earned a total of \$36.
On how many of these days did Jeffrey sweep the kitchen?



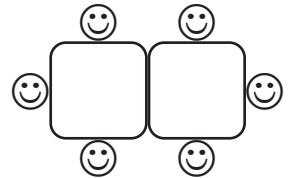
Example Problem 1.4 - Summary

Example Problem 1.4 - Green

Four people can be seated at a single table.

If two tables are placed end to end, six people can be seated as shown in the diagram.

How many tables must be placed end to end to seat 10 people?

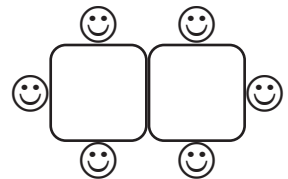


Example Problem 1.4 - Yellow

Four people can be seated at a single table.

If two tables are placed end to end, six people can be seated as shown in the diagram.

How many tables must be placed end to end to seat 22 people?



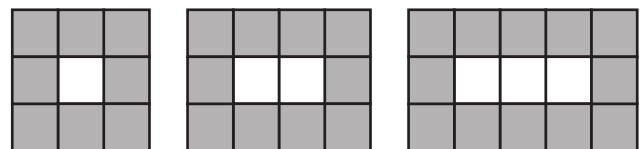
Example Problem 1.4 - Orange

I am making a pattern with square tiles.

I surround one row of white tiles with grey tiles.

The diagram shows what it looks like when I have 1, 2, and 3 white tiles.

How many grey tiles will I need when I have a row of 20 white tiles?





Answers

Set Yellow		Set Green		Preparation Tasks		Set Orange	
1.1	Friday	1.1	Thursday	1	6j	1.1	7
1.2	8	1.2	2	2	44	1.2	12
1.3	2	1.3	2	3	12	1.3	3
1.4	10	1.4	4	4	40	1.4	46